

GenCore version 5.1.8  
Copyright (c) 1993 - 2006 Bioacceleration Ltd.

OM protein - protein search, using sw model

Run on: May 8, 2006, 20:00:11 ; Search time 42.5436 Seconds  
(without alignments)  
629.992 Million cell updates/sec

US-10-517-309-4

Title: 316  
Perfect score: 316  
Sequence: 1 LEATSLNPVDMKIQKGMIRP.....GSGVKNFRACDPKVAVLSTL 61

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database :

A\_Geneseq\_21:.\*  
1: geneseqp1980s:.\*  
2: geneseqp1990s:.\*  
3: geneseqp2000s:.\*  
4: geneseqp2001s:.\*  
5: geneseqp2002s:.\*  
6: geneseqp2003s:.\*  
7: geneseqp2003bs:.\*  
8: geneseqp2004s:.\*  
9: geneseqp2005s:.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description         |
|------------|-------|-------------|--------|-------|---------------------|
| 1          | 316   | 100.0       | 61     | 8     | ADG93324 A thalian  |
| 2          | 316   | 100.0       | 324    | 3     | ADG93983 Arabidops  |
| 3          | 316   | 100.0       | 329    | 3     | ADG93982 Arabidops  |
| 4          | 316   | 100.0       | 329    | 5     | ABR92914 Herbicida  |
| 5          | 316   | 100.0       | 329    | 8     | ADG93321 Arabidops  |
| 6          | 316   | 100.0       | 329    | 8     | ADJ63876 Plant lip  |
| 7          | 316   | 100.0       | 354    | 3     | ADG93981 Arabidops  |
| 8          | 313   | 99.1        | 262    | 3     | ADG93981 Arabidops  |
| 9          | 313   | 99.1        | 267    | 3     | ADG93981 Arabidops  |
| 10         | 313   | 99.1        | 292    | 3     | ADG93981 Arabidops  |
| 11         | 247   | 78.2        | 61     | 8     | ADG93324 A thalian  |
| 12         | 247   | 78.2        | 329    | 3     | ADG93983 Arabidops  |
| 13         | 235   | 74.4        | 370    | 8     | ADG93323 Spinacia   |
| 14         | 204   | 64.6        | 360    | 8     | ADY04426 Plant ful  |
| 15         | 167   | 52.8        | 301    | 9     | ABM92853 M. xanthu  |
| 16         | 145   | 45.9        | 313    | 5     | ABR47714 Listeria   |
| 17         | 140   | 44.3        | 322    | 4     | AAU035110 Enterococ |
| 18         | 136.5 | 43.2        | 329    | 8     | ADG93323 Spinacia   |
| 19         | 135   | 42.7        | 323    | 7     | ADH86951 Enterococ  |
| 20         | 125   | 39.6        | 318    | 8     | ADG93323 Spinacia   |
| 21         | 120.5 | 38.1        | 309    | 3     | ADG93323 Spinacia   |
| 22         | 120.5 | 38.1        | 386    | 3     | ADG93323 Spinacia   |
| 23         | 120   | 38.0        | 328    | 8     | ADG93323 Spinacia   |
| 24         | 120   | 38.0        | 333    | 8     | ADG93323 Spinacia   |

|    |       |      |     |   |                    |
|----|-------|------|-----|---|--------------------|
| 25 | 115.5 | 36.6 | 309 | 3 | AAU43468 Arabidops |
| 26 | 115.5 | 36.6 | 386 | 3 | AAU43467 Arabidops |
| 27 | 115   | 36.4 | 340 | 6 | ABU29420 Protein e |
| 28 | 115   | 36.4 | 346 | 7 | ADH88149 Enterococ |
| 29 | 114.5 | 36.2 | 330 | 8 | ADG92666 Plant ful |
| 30 | 112.5 | 35.6 | 117 | 3 | ABD27050 Auxin-ind |
| 31 | 112.5 | 35.6 | 117 | 5 | AAU80747 Eucalyptu |
| 32 | 112.5 | 35.6 | 117 | 9 | ADH75481 Eucalyptu |
| 33 | 112.5 | 35.6 | 117 | 9 | ADH75481 Eucalyptu |
| 34 | 112   | 35.4 | 338 | 4 | AAU35351 Enterococ |
| 35 | 111.5 | 35.3 | 318 | 3 | AAU27051 Auxin-ind |
| 36 | 111.5 | 35.3 | 318 | 5 | AAU80748 Eucalyptu |
| 37 | 111.5 | 35.3 | 318 | 7 | ADH75482 Eucalyptu |
| 38 | 111.5 | 35.3 | 318 | 9 | ADH75481 Eucalyptu |
| 39 | 109   | 34.5 | 328 | 7 | ADU13681 C. glutam |
| 40 | 109   | 34.5 | 328 | 7 | ADU13681 C. glutam |
| 41 | 105   | 33.2 | 306 | 4 | AAU79226 Coryneb   |
| 42 | 105   | 33.2 | 306 | 4 | AAU79226 Coryneb   |
| 43 | 105   | 33.2 | 363 | 3 | AAU3028 C glutami  |
| 44 | 105   | 33.2 | 363 | 3 | AAU3028 C glutami  |
| 45 | 105   | 33.2 | 366 | 3 | AAU3028 C glutami  |

#### ALIGNMENTS

RESULT 1  
ADG93324  
ID ADG93324 standard; protein; 61 AA.  
XX  
AC ADG93324;  
XX  
DT 11-MAR-2004 (first entry)  
XX  
DE A thaliana IR41 protein region related to plastid targeting peptides.  
XX  
XX intraplastid targeting peptide; protein transport; plast; chloroplast;  
XX transgenic plant; lipid biosynthesis; lipid; starch; vitamin; hormone;  
XX disease resistance; herbicide resistance; light capture; bioremediation;  
XX TOC membrane import pathway; TIC membrane import pathway;  
XX internal chloroplast membrane; IR41.  
XX Arabidopsis thaliana.  
XX OS  
XX WO200401050-A1.  
XX PN  
XX 31-DEC-2003.  
XX PD  
XX PF 19-JUN-2003; 2003WO-FR001877.  
XX PR 21-JUN-2002; 2002FR-00007729.  
XX PA (GENO-) GENOPLANT-VALOR.  
XX PI Miras S, Salvi D, Rolland N, Joyard J, Ferro M, Garin J;  
XX Grunwald D;  
XX WPI; 2004-082507/08.  
XX DR  
XX New intraplastid targeting peptide, useful for delivering fused  
XX heterologous sequences for preparing transgenic plants having altered  
XX characteristics.  
XX Claim 1; SEQ ID NO 4; 63pp; French.  
XX This invention relates to a novel intraplastid targeting peptide. The  
XX peptide may be used to transport selected proteins to plastids,  
XX specifically chloroplasts, to create transgenic plants having altered  
XX characteristics. These altered characteristics include, for example,  
XX improved biosynthesis of lipids, starch, vitamins, hormones or proteins;  
XX increased resistance to diseases and herbicides; more efficient light  
XX capture; or overexpression of proteins involved in bioremediation. The  
XX invention does not depend on the TOC or TIC membrane import pathways, so

CC does not compete with, or saturate, them, and importation into the  
CC internal chloroplast membrane is achieved without cleavage of the  
CC targeting peptide. The present sequence is that of a region the IR41  
CC protein of Arabidopsis thaliana which is related to the invention.  
XX  
SQ Sequence 61 aa;

Query Match 100.0%; Score 316; DB 8; Length 61;  
Best Local Similarity 100.0%; Pred. No. 4.1e-37;  
Matches 61; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LEATINPVDWKIKQGMIRPFLPRKPCIPATDVAGGVVSGVKNFKAGDKVAVLISH 60  
DB 1 LEATINPVDWKIKQGMIRPFLPRKPCIPATDVAGGVVSGVKNFKAGDKVAVLISH 60

QY 61 L 61  
DB 61 L 61

RESULT 2  
AAG3983  
ID AAG3983 standard; protein; 324 AA.

AC AAG3983;

DT 18-OCT-2000 (first entry)

DE Arabidopsis thaliana protein fragment SEQ ID NO: 49547.

XX Protein identification; signal transduction pathway; metabolic pathway;  
KW hybridisation assay; genetic mapping; gene expression control; promoter;  
KW termination sequence.

XX Arabidopsis thaliana.

XX EP1033405-A2.

XX 06-SEP-2000.

XX 25-FEB-2000; 2000EP-00301439.

XX 25-FEB-1999; 99US-0121825P.

XX 05-MAR-1999; 99US-0123180P.

XX 09-MAR-1999; 99US-0123548P.

XX 23-MAR-1999; 99US-0125788P.

XX 25-MAR-1999; 99US-0126264P.

XX 29-MAR-1999; 99US-0126785P.

XX 01-APR-1999; 99US-0127462P.

XX 08-APR-1999; 99US-0128234P.

XX 16-APR-1999; 99US-012845P.

XX 19-APR-1999; 99US-0130077P.

XX 21-APR-1999; 99US-0130449P.

XX 23-APR-1999; 99US-0130510P.

XX 28-APR-1999; 99US-0130891P.

XX 30-APR-1999; 99US-0131449P.

XX 30-APR-1999; 99US-0132048P.

XX 04-MAY-1999; 99US-0132484P.

XX 05-MAY-1999; 99US-0132485P.

XX 06-MAY-1999; 99US-0132486P.

XX 07-MAY-1999; 99US-0132487P.

XX 11-MAY-1999; 99US-0132488P.

XX 14-MAY-1999; 99US-0132489P.

XX 14-MAY-1999; 99US-0134219P.

XX 14-MAY-1999; 99US-0134221P.

XX 14-MAY-1999; 99US-0134370P.

XX 18-MAY-1999; 99US-0134768P.

XX 19-MAY-1999; 99US-0134941P.

XX 20-MAY-1999; 99US-0135124P.

XX 21-MAY-1999; 99US-0135353P.

PR 24-MAY-1999; 99US-0135629P.  
PR 25-MAY-1999; 99US-0136021P.  
PR 27-MAY-1999; 99US-0136392P.  
PR 28-MAY-1999; 99US-0136782P.  
PR 01-JUN-1999; 99US-0137222P.  
PR 03-JUN-1999; 99US-0137528P.  
PR 04-JUN-1999; 99US-0137502P.  
PR 07-JUN-1999; 99US-0137724P.  
PR 08-JUN-1999; 99US-0138094P.  
PR 10-JUN-1999; 99US-0138540P.  
PR 10-JUN-1999; 99US-0138847P.  
PR 14-JUN-1999; 99US-0139119P.  
PR 16-JUN-1999; 99US-0139452P.  
PR 16-JUN-1999; 99US-0139453P.  
PR 17-JUN-1999; 99US-0139492P.  
PR 18-JUN-1999; 99US-0139454P.  
PR 18-JUN-1999; 99US-0139455P.  
PR 18-JUN-1999; 99US-0139456P.  
PR 18-JUN-1999; 99US-0139457P.  
PR 18-JUN-1999; 99US-0139458P.  
PR 18-JUN-1999; 99US-0139459P.  
PR 18-JUN-1999; 99US-0139460P.  
PR 18-JUN-1999; 99US-0139461P.  
PR 18-JUN-1999; 99US-0139462P.  
PR 18-JUN-1999; 99US-0139463P.  
PR 18-JUN-1999; 99US-0139750P.  
PR 18-JUN-1999; 99US-0139750P.  
PR 18-JUN-1999; 99US-0139750P.  
PR 21-JUN-1999; 99US-0139817P.  
PR 22-JUN-1999; 99US-0139899P.  
PR 23-JUN-1999; 99US-0140353P.  
PR 23-JUN-1999; 99US-0140354P.  
PR 24-JUN-1999; 99US-0140695P.  
PR 24-JUN-1999; 99US-0140823P.  
PR 28-JUN-1999; 99US-0140991P.  
PR 29-JUN-1999; 99US-0141287P.  
PR 30-JUN-1999; 99US-0141842P.  
PR 01-JUL-1999; 99US-0142154P.  
PR 01-JUL-1999; 99US-0142055P.  
PR 02-JUL-1999; 99US-0142390P.  
PR 06-JUL-1999; 99US-0142803P.  
PR 08-JUL-1999; 99US-0142970P.  
PR 09-JUL-1999; 99US-0142970P.  
PR 12-JUL-1999; 99US-0143542P.  
PR 13-JUL-1999; 99US-0143624P.  
PR 14-JUL-1999; 99US-0144005P.  
PR 15-JUL-1999; 99US-0144085P.  
PR 16-JUL-1999; 99US-0144086P.  
PR 16-JUL-1999; 99US-0144325P.  
PR 19-JUL-1999; 99US-0144331P.  
PR 19-JUL-1999; 99US-0144332P.  
PR 19-JUL-1999; 99US-0144333P.  
PR 19-JUL-1999; 99US-0144334P.  
PR 19-JUL-1999; 99US-0144335P.  
PR 19-JUL-1999; 99US-0144335P.  
PR 20-JUL-1999; 99US-0144632P.  
PR 20-JUL-1999; 99US-0144684P.  
PR 21-JUL-1999; 99US-0144814P.  
PR 21-JUL-1999; 99US-0145086P.  
PR 21-JUL-1999; 99US-0145086P.  
PR 21-JUL-1999; 99US-0145086P.  
PR 22-JUL-1999; 99US-0145087P.  
PR 22-JUL-1999; 99US-0145087P.  
PR 22-JUL-1999; 99US-0145087P.  
PR 22-JUL-1999; 99US-0145087P.  
PR 22-JUL-1999; 99US-0145145P.  
PR 22-JUL-1999; 99US-0145145P.  
PR 23-JUL-1999; 99US-0145218P.  
PR 23-JUL-1999; 99US-0145224P.  
PR 23-JUL-1999; 99US-0145276P.  
PR 26-JUL-1999; 99US-0145913P.  
PR 27-JUL-1999; 99US-0145913P.  
PR 27-JUL-1999; 99US-0145913P.  
PR 27-JUL-1999; 99US-0145913P.  
PR 28-JUL-1999; 99US-0145913P.  
PR 28-JUL-1999; 99US-0145913P.  
PR 02-AUG-1999; 99US-0146388P.

PR 02-AUG-1999; 99US-0146389P.  
 PR 03-AUG-1999; 99US-0147038P.  
 PR 04-AUG-1999; 99US-0147204P.  
 PR 04-AUG-1999; 99US-0147302P.  
 PR 05-AUG-1999; 99US-0147192P.  
 PR 05-AUG-1999; 99US-0147260P.  
 PR 06-AUG-1999; 99US-0147303P.  
 PR 06-AUG-1999; 99US-0147416P.  
 PR 09-AUG-1999; 99US-0147493P.  
 PR 09-AUG-1999; 99US-0147935P.  
 PR 10-AUG-1999; 99US-0148171P.  
 PR 11-AUG-1999; 99US-0148319P.  
 PR 12-AUG-1999; 99US-0148341P.  
 PR 13-AUG-1999; 99US-0148565P.  
 PR 13-AUG-1999; 99US-0148684P.  
 PR 16-AUG-1999; 99US-0149368P.  
 PR 17-AUG-1999; 99US-0149175P.  
 PR 18-AUG-1999; 99US-0149426P.  
 PR 20-AUG-1999; 99US-0149722P.  
 PR 20-AUG-1999; 99US-0149723P.  
 PR 20-AUG-1999; 99US-0149929P.  
 PR 23-AUG-1999; 99US-0149902P.  
 PR 23-AUG-1999; 99US-0149930P.  
 PR 25-AUG-1999; 99US-0150566P.  
 PR 26-AUG-1999; 99US-0150884P.  
 PR 27-AUG-1999; 99US-0151065P.  
 PR 27-AUG-1999; 99US-0151066P.  
 PR 27-AUG-1999; 99US-0151080P.  
 PR 30-AUG-1999; 99US-0151303P.  
 PR 31-AUG-1999; 99US-0151438P.  
 PR 01-SEP-1999; 99US-0151930P.  
 PR 07-SEP-1999; 99US-0152363P.  
 PR 10-SEP-1999; 99US-0153070P.  
 PR 13-SEP-1999; 99US-0153758P.  
 PR 15-SEP-1999; 99US-0154018P.  
 PR 16-SEP-1999; 99US-0154039P.  
 PR 20-SEP-1999; 99US-0154779P.  
 PR 22-SEP-1999; 99US-0155133P.  
 PR 23-SEP-1999; 99US-0155486P.  
 PR 24-SEP-1999; 99US-0155659P.  
 PR 26-SEP-1999; 99US-0156458P.  
 PR 29-SEP-1999; 99US-0156596P.  
 PR 04-OCT-1999; 99US-0157117P.  
 PR 05-OCT-1999; 99US-0157353P.  
 PR 06-OCT-1999; 99US-0157865P.  
 PR 07-OCT-1999; 99US-0158029P.  
 PR 08-OCT-1999; 99US-0158232P.  
 PR 12-OCT-1999; 99US-0158369P.  
 PR 13-OCT-1999; 99US-0158293P.  
 PR 13-OCT-1999; 99US-0159294P.  
 PR 14-OCT-1999; 99US-0159295P.  
 PR 14-OCT-1999; 99US-0159330P.  
 PR 14-OCT-1999; 99US-0159331P.  
 PR 14-OCT-1999; 99US-0159637P.  
 PR 14-OCT-1999; 99US-0159638P.  
 PR 18-OCT-1999; 99US-0159584P.  
 PR 21-OCT-1999; 99US-0160741P.  
 PR 21-OCT-1999; 99US-0160767P.  
 PR 21-OCT-1999; 99US-0160768P.  
 PR 21-OCT-1999; 99US-0160770P.  
 PR 21-OCT-1999; 99US-0160814P.  
 PR 21-OCT-1999; 99US-0160815P.  
 PR 22-OCT-1999; 99US-0160980P.  
 PR 22-OCT-1999; 99US-0160981P.  
 PR 22-OCT-1999; 99US-0160989P.  
 PR 25-OCT-1999; 99US-0161405P.  
 PR 25-OCT-1999; 99US-0161406P.  
 PR 26-OCT-1999; 99US-0161359P.  
 PR 26-OCT-1999; 99US-0161360P.  
 PR 26-OCT-1999; 99US-0161361P.  
 PR 28-OCT-1999; 99US-0161920P.

PR 28-OCT-1999; 99US-0161992P.  
 PR 28-OCT-1999; 99US-0161993P.  
 PR 29-OCT-1999; 99US-0162142P.

Query Match  
 Best Local Similarity 100.0%; Score 316; DB 3; Length 324;  
 Matches 61; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 LEATSLNPVDWKIKGMI RPLPKRPCTIPATDVAGEVVEVGGVKNFKAGDKVAVALSH 60  
 DB 35 LEATSLNPVDWKIKGMI RPLPKRPCTIPATDVAGEVVEVGGVKNFKAGDKVAVALSH 94

QY 61 L 61  
 DB 95 L 95

RESULT 3  
 ID AAG39982 standard; protein; 329 AA.  
 AC AAG39982;  
 XX 18-OCT-2000 (first entry)  
 DT Arabidopsis thaliana protein fragment SEQ ID NO: 49546.  
 DE  
 XX Protein identification; signal transduction pathway; metabolic pathway;  
 KW hybridisation assay; genetic mapping; gene expression control; promoter;  
 KM termination sequence.  
 XX Arabidopsis thaliana.  
 OS  
 XX  
 PN EP1033405-A2.  
 PD 06-SEP-2000.  
 XX  
 XX 25-FEB-2000; 2000EP-00301439.  
 PF  
 XX 25-FEB-1999; 99US-0121825P.  
 PR 05-MAR-1999; 99US-012180P.  
 PR 09-MAR-1999; 99US-0123548P.  
 PR 23-MAR-1999; 99US-0125788P.  
 PR 25-MAR-1999; 99US-0126264P.  
 PR 29-MAR-1999; 99US-0126785P.  
 PR 01-APR-1999; 99US-0127462P.  
 PR 06-APR-1999; 99US-0128234P.  
 PR 08-APR-1999; 99US-0128714P.  
 PR 16-APR-1999; 99US-0129845P.  
 PR 19-APR-1999; 99US-0130077P.  
 PR 21-APR-1999; 99US-0130449P.  
 PR 23-APR-1999; 99US-0130510P.  
 PR 23-APR-1999; 99US-0130891P.  
 PR 28-APR-1999; 99US-0131449P.  
 PR 30-APR-1999; 99US-0132048P.  
 PR 30-APR-1999; 99US-0132407P.  
 PR 04-MAY-1999; 99US-0132485P.  
 PR 05-MAY-1999; 99US-0132486P.  
 PR 06-MAY-1999; 99US-0132487P.  
 PR 07-MAY-1999; 99US-0132863P.  
 PR 11-MAY-1999; 99US-0134256P.  
 PR 14-MAY-1999; 99US-0134218P.  
 PR 14-MAY-1999; 99US-0134221P.  
 PR 14-MAY-1999; 99US-0134370P.  
 PR 18-MAY-1999; 99US-0134768P.  
 PR 19-MAY-1999; 99US-0134941P.  
 PR 20-MAY-1999; 99US-0135124P.  
 PR 21-MAY-1999; 99US-0135353P.  
 PR 24-MAY-1999; 99US-0135629P.  
 PR 25-MAY-1999; 99US-0136021P.  
 PR 27-MAY-1999; 99US-0136392P.

GenCore version 5.1.8  
Copyright (c) 1993 - 2006 Bioacceleration Ltd.

OM protein - protein search, using sw model

Run on: May 8, 2006, 20:16:32 ; Search time 186 Seconds  
(without alignments)  
25.985 Million cell updates/sec

Title: us-10-517-309-1\_COPY\_49\_59

Perfect score: 63

Sequence: 1 DMKIQGMIRP 11

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0  
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%  
Maximum Match 100%

Listing first 1000 summaries

Database :

1: \_A\_Geneseq\_21:.\*  
2: Geneseq1980s:.\*  
3: Geneseq1990s:.\*  
4: Geneseq2000s:.\*  
5: Geneseq2002s:.\*  
6: Geneseq2003as:.\*  
7: Geneseq2003bs:.\*  
8: Geneseq2004s:.\*  
9: Geneseq2005s:.\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description        |
|------------|-------|-------------|--------|-------|--------------------|
| 1          | 63    | 100.0       | 61     | 8     | ADG93324 A thalian |
| 2          | 63    | 100.0       | 262    | 3     | ADG05068 Arabidops |
| 3          | 63    | 100.0       | 267    | 3     | ADG05067 Arabidops |
| 4          | 63    | 100.0       | 292    | 3     | ADG05066 Arabidops |
| 5          | 63    | 100.0       | 324    | 3     | ADG39983 Arabidops |
| 6          | 63    | 100.0       | 329    | 3     | ADG39982 Arabidops |
| 7          | 63    | 100.0       | 329    | 5     | ADG92914 Arabidops |
| 8          | 63    | 100.0       | 329    | 8     | ADG93321 Arabidops |
| 9          | 63    | 100.0       | 329    | 8     | ADG63876 Arabidops |
| 10         | 63    | 100.0       | 354    | 3     | ADG39981 Arabidops |
| 11         | 62    | 98.4        | 370    | 8     | ADG04426 Arabidops |
| 12         | 57    | 90.5        | 61     | 8     | ADG93325 Arabidops |
| 13         | 57    | 90.5        | 329    | 8     | ADG93323 Arabidops |
| 14         | 44    | 69.8        | 360    | 8     | ADG08275 Arabidops |
| 15         | 41    | 65.1        | 1024   | 9     | ADG15659 Arabidops |
| 16         | 41    | 65.1        | 1039   | 3     | ADG15659 Arabidops |
| 17         | 40    | 63.5        | 341    | 4     | ADG58837 Arabidops |
| 18         | 40    | 63.5        | 354    | 2     | ADG58837 Arabidops |
| 19         | 39    | 61.9        | 146    | 8     | ADG23181 Arabidops |
| 20         | 39    | 61.9        | 425    | 4     | ADG27702 Arabidops |
| 21         | 39    | 61.9        | 507    | 4     | ADG27702 Arabidops |
| 22         | 39    | 61.9        | 507    | 6     | ADG27702 Arabidops |
| 23         | 39    | 61.9        | 507    | 6     | ADG27702 Arabidops |
| 24         | 38.5  | 61.1        | 1026   | 5     | ADG27702 Arabidops |

|    |      |      |      |   |                     |
|----|------|------|------|---|---------------------|
| 25 | 38   | 60.3 | 212  | 3 | ADG50404 Arabidops  |
| 26 | 38   | 60.3 | 212  | 3 | ADG11179 Arabidops  |
| 27 | 38   | 60.3 | 240  | 3 | ADG11178 Arabidops  |
| 28 | 38   | 60.3 | 240  | 3 | ADG50403 Arabidops  |
| 29 | 38   | 60.3 | 266  | 3 | ADG11177 Arabidops  |
| 30 | 38   | 60.3 | 266  | 3 | ADG50402 Arabidops  |
| 31 | 38   | 60.3 | 349  | 9 | ADG11098 Arabidops  |
| 32 | 38   | 60.3 | 363  | 9 | ADG11098 Arabidops  |
| 33 | 38   | 60.3 | 375  | 3 | ADG23212 Arabidops  |
| 34 | 38   | 60.3 | 393  | 6 | ADG30615 Arabidops  |
| 35 | 38   | 60.3 | 423  | 3 | ADG23211 Arabidops  |
| 36 | 38   | 60.3 | 485  | 3 | ADG23210 Arabidops  |
| 37 | 38   | 60.3 | 531  | 7 | ADG073763 Arabidops |
| 38 | 38   | 60.3 | 644  | 3 | ADG15627 Arabidops  |
| 39 | 38   | 60.3 | 687  | 3 | ADG15626 Arabidops  |
| 40 | 38   | 60.3 | 696  | 3 | ADG15625 Arabidops  |
| 41 | 38   | 60.3 | 900  | 6 | ADG35311 Arabidops  |
| 42 | 38   | 60.3 | 1752 | 6 | ADG14923 Arabidops  |
| 43 | 38   | 60.3 | 1752 | 6 | ADG14916 Arabidops  |
| 44 | 38   | 60.3 | 1810 | 4 | ADG71194 Arabidops  |
| 45 | 38   | 60.3 | 3387 | 4 | ADG07991 Arabidops  |
| 46 | 38   | 60.3 | 3387 | 4 | ADG07992 Arabidops  |
| 47 | 38   | 60.3 | 3387 | 6 | ADG35313 Arabidops  |
| 48 | 38   | 60.3 | 3387 | 6 | ADG35312 Arabidops  |
| 49 | 38   | 60.3 | 3388 | 6 | ADG55314 Arabidops  |
| 50 | 37   | 58.7 | 290  | 8 | ADG89125 Arabidops  |
| 51 | 37   | 58.7 | 294  | 5 | ADG66291 Arabidops  |
| 52 | 37   | 58.7 | 338  | 8 | ADG23863 Arabidops  |
| 53 | 37   | 58.7 | 350  | 9 | ADG51103 Arabidops  |
| 54 | 37   | 58.7 | 357  | 3 | ADG31747 Arabidops  |
| 55 | 37   | 58.7 | 440  | 3 | ADG31746 Arabidops  |
| 56 | 37   | 58.7 | 495  | 2 | ADG13648 Arabidops  |
| 57 | 37   | 58.7 | 505  | 4 | ADG06648 Arabidops  |
| 58 | 37   | 58.7 | 512  | 3 | ADG31745 Arabidops  |
| 59 | 37   | 58.7 | 546  | 7 | ADG077105 Arabidops |
| 60 | 37   | 58.7 | 718  | 8 | ADG22220 Arabidops  |
| 61 | 37   | 58.7 | 737  | 8 | ADG24980 Arabidops  |
| 62 | 37   | 58.7 | 782  | 6 | ADG29962 Arabidops  |
| 63 | 37   | 58.7 | 814  | 4 | ADG96535 Arabidops  |
| 64 | 37   | 58.7 | 1249 | 8 | ADG23446 Arabidops  |
| 65 | 36.5 | 57.9 | 218  | 8 | ADG77098 Arabidops  |
| 66 | 36   | 57.1 | 58   | 4 | ADG58731 Arabidops  |
| 67 | 36   | 57.1 | 58   | 4 | ADG43092 Arabidops  |
| 68 | 36   | 57.1 | 58   | 4 | ADG36919 Arabidops  |
| 69 | 36   | 57.1 | 58   | 4 | ADG76813 Arabidops  |
| 70 | 36   | 57.1 | 58   | 4 | ADG63991 Arabidops  |
| 71 | 36   | 57.1 | 58   | 4 | ADG58490 Arabidops  |
| 72 | 36   | 57.1 | 58   | 5 | ADG45965 Arabidops  |
| 73 | 36   | 57.1 | 72   | 8 | ADG58737 Arabidops  |
| 74 | 36   | 57.1 | 86   | 8 | ADG58733 Arabidops  |
| 75 | 36   | 57.1 | 110  | 4 | ADG30331 Arabidops  |
| 76 | 36   | 57.1 | 111  | 4 | ADG89172 Arabidops  |
| 77 | 36   | 57.1 | 136  | 8 | ADG05613 Arabidops  |
| 78 | 36   | 57.1 | 138  | 4 | ADG05613 Arabidops  |
| 79 | 36   | 57.1 | 139  | 4 | ADG05612 Arabidops  |
| 80 | 36   | 57.1 | 139  | 8 | ADG98705 Arabidops  |
| 81 | 36   | 57.1 | 167  | 5 | ADG68033 Arabidops  |
| 82 | 36   | 57.1 | 167  | 8 | ADG58718 Arabidops  |
| 83 | 36   | 57.1 | 167  | 8 | ADG58721 Arabidops  |
| 84 | 36   | 57.1 | 167  | 8 | ADG98789 Arabidops  |
| 85 | 36   | 57.1 | 167  | 8 | ADG98789 Arabidops  |
| 86 | 36   | 57.1 | 191  | 8 | ADG58730 Arabidops  |
| 87 | 36   | 57.1 | 191  | 8 | ADG98047 Arabidops  |
| 88 | 36   | 57.1 | 207  | 7 | ADG86949 Arabidops  |
| 89 | 36   | 57.1 | 210  | 7 | ADG08345 Arabidops  |
| 90 | 36   | 57.1 | 213  | 4 | ADG10686 Arabidops  |
| 91 | 36   | 57.1 | 217  | 8 | ADG58724 Arabidops  |
| 92 | 36   | 57.1 | 217  | 8 | ADG58724 Arabidops  |
| 93 | 36   | 57.1 | 219  | 4 | ADG80153 Arabidops  |
| 94 | 36   | 57.1 | 248  | 6 | ADG18749 Arabidops  |
| 95 | 36   | 57.1 | 277  | 6 | ADG068173 Arabidops |
| 96 | 36   | 57.1 | 292  | 6 | ADG31176 Arabidops  |
| 97 | 36   | 57.1 | 317  | 6 | ADG15932 Arabidops  |

```
974 33 52.4 727 8 ADQ17843 Adq17843 Human soc
975 33 52.4 727 9 AEB70597 Aeb70597 Procollag
976 33 52.4 727 9 AEB70596 Aeb70596 Procollag
977 33 52.4 728 2 AAW44851 Aaw44851 Hereditar
978 33 52.4 728 6 ABG74453 Abg74453 Human exo
979 33 52.4 728 7 ADJ71171 Adj71171 Human hea
980 33 52.4 729 9 AEB70602 Aeb70602 Lysyl hyd
981 33 52.4 736 1 AEB70601 Aeb70601 Lysyl hyd
982 33 52.4 738 1 AAP70382 Aap70382 Sequence
983 33 52.4 738 2 AAR47899 Aar47899 Human mel
984 33 52.4 738 4 AAB62882 Aab62882 Membrane
985 33 52.4 738 4 AAB62881 Aab62881 Membrane
986 33 52.4 738 4 AAE06668 Aae06668 Mouse p97
987 33 52.4 738 5 AAU78363 Aau78363 Cell diff
988 33 52.4 738 5 ADN11150 Adn11150 Human mel
989 33 52.4 738 8 ADU82735 Adu82735 Human mel
990 33 52.4 770 4 ABH69397 Abh69397 Drosophi1
991 33 52.4 772 4 ABB57750 Abb57750 Drosophi1
992 33 52.4 774 9 AEB70599 Aeb70599 Lysyl hyd
993 33 52.4 967 8 ADS21876 Ads21876 Bacteri1
994 33 52.4 1010 9 ADX39944 Adx39944 HIV Pol P
995 33 52.4 1246 6 ABU46960 Abu46960 Protein e
996 33 52.4 1298 7 ADG48229 Adg48229 Human ret
997 33 52.4 1322 7 ADG48228 Adg48228 Human ret
998 33 52.4 1376 7 AAE39971 Aae39971 Human CRU
999 33 52.4 1376 7 ADJ68965 Adj68965 Human hea
1000 33 52.4 1376 9 ADV70178 Adv70178 Tumor-ass
```

## ALIGNMENTS

```
RESULT 1
ADG93324
ID ADG93324 standard; protein; 61 AA.
AC ADG93324;
DT 11-MAR-2004 (first entry)
DE A thaliana IB41 protein region related to plastid targeting peptides.
XX intraplastid targeting peptide; protein transport; plast; chloroplast;
XX transgenic plant; lipid biosynthesis; lipid; starch; vitamin; hormone;
XX disease resistance; herbicide resistance; light capture; bioremediation;
XX TOC membrane import pathway; TIC membrane import pathway;
XX internal chloroplast membrane; IB41.
XX Arabidopsis thaliana.
XX OS
XX WO2004001050-A1.
XX PN
XX 31-DEC-2003.
XX PD
XX 19-JUN-2003; 2003WO-FR001877.
XX PF
XX 21-JUN-2002; 2002FR-00007729.
XX PR
XX (GENO-) GENOPLANTE-VALOR.
XX PA
XX Miras S, Salvi D, Rolland N, Joyard J, Ferro M, Garin J,
XX Grunwald D;
XX WPI; 2004-082507/08.
XX DR
XX New intraplastid targeting peptide, useful for delivering fused
XX PT heterologous sequences for preparing transgenic plants having altered
XX PT characteristics.
XX PS
XX Claim 1; SEQ ID NO 4; 63pp; French.
XX SC This invention relates to a novel intraplastid targeting peptide. The
XX peptide may be used to transport selected proteins to plaasts,
```

```
CC specifically chloroplasts, to create transgenic plants having altered
CC characteristics. These altered characteristics include, for example,
CC improved biosynthesis of lipids, starch, vitamins, hormones or proteins;
CC increased resistance to diseases and herbicides; more efficient light
CC capture; or overexpression of proteins involved in bioremediation. The
CC invention does not depend on the TOC or TIC membrane import pathways, so
CC does not compete with, or saturate, them, and importation into the
CC internal chloroplast membrane is achieved without cleavage of the
CC targeting peptide. The present sequence is that of a region the IB41
CC protein of Arabidopsis thaliana which is related to the invention.
XX
SQ Sequence 61 AA:
Query Match 100.0%; Score 63; DB 8; Length 61;
Best Local Similarity 100.0%; Pred. No. 0.0004;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
CY 1 DWKIOKGMIRP 11
DB 10 DWKIOKGMIRP 20
RESULT 2
AAG05068
ID AAG05068 standard; protein; 262 AA.
AC AAG05068;
DT 17-OCT-2000 (first entry)
DE Arabidopsis thaliana protein fragment SEQ ID NO: 1332.
XX
XX Protein identification; signal transduction pathway; metabolic pathway;
XX hybridisation assay; genetic mapping; gene expression control; promoter;
XX termination sequence.
XX
XX Arabidopsis thaliana.
XX OS
XX EP1033405-A2.
XX PN
XX 06-SEP-2000.
XX PD
XX 25-FEB-2000; 2000EP-00301439.
XX PF
XX 25-FEB-1999; 99US-0121825P.
XX PR 05-MAR-1999; 99US-0123180P.
XX PR 09-MAR-1999; 99US-0123548P.
XX PR 23-MAR-1999; 99US-0125788P.
XX PR 25-MAR-1999; 99US-0126264P.
XX PR 29-MAR-1999; 99US-0126785P.
XX PR 01-APR-1999; 99US-0127462P.
XX PR 06-APR-1999; 99US-0128234P.
XX PR 08-APR-1999; 99US-0128714P.
XX PR 16-APR-1999; 99US-0129845P.
XX PR 19-APR-1999; 99US-0130077P.
XX PR 21-APR-1999; 99US-0130449P.
XX PR 23-APR-1999; 99US-0130510P.
XX PR 28-APR-1999; 99US-0130891P.
XX PR 30-APR-1999; 99US-0131449P.
XX PR 30-APR-1999; 99US-0132048P.
XX PR 30-APR-1999; 99US-0132407P.
XX PR 04-MAY-1999; 99US-0132484P.
XX PR 05-MAY-1999; 99US-0132485P.
XX PR 06-MAY-1999; 99US-0132486P.
XX PR 06-MAY-1999; 99US-0132487P.
XX PR 07-MAY-1999; 99US-0132863P.
XX PR 11-MAY-1999; 99US-0134256P.
XX PR 14-MAY-1999; 99US-0134218P.
XX PR 14-MAY-1999; 99US-0134219P.
XX PR 14-MAY-1999; 99US-0134221P.
XX PR 14-MAY-1999; 99US-0134370P.
XX PR 16-MAY-1999; 99US-0134768P.
XX PR 19-MAY-1999; 99US-0134941P.
```

PR 20-MAY-1999; 99US-0135124P.  
PR 21-MAY-1999; 99US-0135353P.  
PR 24-MAY-1999; 99US-0135629P.  
PR 25-MAY-1999; 99US-0136021P.  
PR 27-MAY-1999; 99US-0136392P.  
PR 28-MAY-1999; 99US-0136782P.  
PR 01-JUN-1999; 99US-0137222P.  
PR 03-JUN-1999; 99US-0137528P.  
PR 04-JUN-1999; 99US-0137502P.  
PR 07-JUN-1999; 99US-0137724P.  
PR 08-JUN-1999; 99US-0138094P.  
PR 10-JUN-1999; 99US-0138540P.  
PR 10-JUN-1999; 99US-0138847P.  
PR 14-JUN-1999; 99US-0139119P.  
PR 16-JUN-1999; 99US-0139452P.  
PR 16-JUN-1999; 99US-0139453P.  
PR 17-JUN-1999; 99US-0139492P.  
PR 18-JUN-1999; 99US-0139454P.  
PR 18-JUN-1999; 99US-0139455P.  
PR 18-JUN-1999; 99US-0139456P.  
PR 18-JUN-1999; 99US-0139457P.  
PR 18-JUN-1999; 99US-0139458P.  
PR 18-JUN-1999; 99US-0139459P.  
PR 18-JUN-1999; 99US-0139460P.  
PR 18-JUN-1999; 99US-0139461P.  
PR 18-JUN-1999; 99US-0139462P.  
PR 18-JUN-1999; 99US-0139463P.  
PR 18-JUN-1999; 99US-0139750P.  
PR 18-JUN-1999; 99US-0139763P.  
PR 21-JUN-1999; 99US-0139817P.  
PR 22-JUN-1999; 99US-0139899P.  
PR 23-JUN-1999; 99US-0140353P.  
PR 23-JUN-1999; 99US-0140354P.  
PR 24-JUN-1999; 99US-0140695P.  
PR 28-JUN-1999; 99US-0140823P.  
PR 29-JUN-1999; 99US-0140991P.  
PR 30-JUN-1999; 99US-0141287P.  
PR 01-JUL-1999; 99US-0141842P.  
PR 01-JUL-1999; 99US-0142154P.  
PR 02-JUL-1999; 99US-0142055P.  
PR 06-JUL-1999; 99US-0142390P.  
PR 08-JUL-1999; 99US-0142803P.  
PR 09-JUL-1999; 99US-0142820P.  
PR 12-JUL-1999; 99US-0142877P.  
PR 13-JUL-1999; 99US-0143452P.  
PR 14-JUL-1999; 99US-0143624P.  
PR 15-JUL-1999; 99US-0144005P.  
PR 16-JUL-1999; 99US-0144086P.  
PR 16-JUL-1999; 99US-0144086P.  
PR 19-JUL-1999; 99US-0144325P.  
PR 19-JUL-1999; 99US-0144331P.  
PR 19-JUL-1999; 99US-0144332P.  
PR 19-JUL-1999; 99US-0144333P.  
PR 19-JUL-1999; 99US-0144334P.  
PR 19-JUL-1999; 99US-0144335P.  
PR 20-JUL-1999; 99US-0144352P.  
PR 20-JUL-1999; 99US-0144632P.  
PR 20-JUL-1999; 99US-0145087P.  
PR 22-JUL-1999; 99US-0145089P.  
PR 22-JUL-1999; 99US-0145192P.  
PR 23-JUL-1999; 99US-0145145P.  
PR 23-JUL-1999; 99US-0145218P.  
PR 23-JUL-1999; 99US-0145244P.  
PR 26-JUL-1999; 99US-0145276P.  
PR 27-JUL-1999; 99US-0145913P.  
PR 27-JUL-1999; 99US-0145919P.  
PR 28-JUL-1999; 99US-0145951P.

PR 02-AUG-1999; 99US-0146386P.  
PR 02-AUG-1999; 99US-0146388P.  
PR 02-AUG-1999; 99US-0146389P.  
PR 03-AUG-1999; 99US-0147038P.  
PR 04-AUG-1999; 99US-0147204P.  
PR 04-AUG-1999; 99US-0147302P.  
PR 05-AUG-1999; 99US-0147719P.  
PR 05-AUG-1999; 99US-0147760P.  
PR 06-AUG-1999; 99US-0147703P.  
PR 06-AUG-1999; 99US-0147730P.  
PR 06-AUG-1999; 99US-0147731P.  
PR 09-AUG-1999; 99US-0147936P.  
PR 09-AUG-1999; 99US-0147937P.  
PR 09-AUG-1999; 99US-0148171P.  
PR 10-AUG-1999; 99US-0148319P.  
PR 11-AUG-1999; 99US-0148341P.  
PR 12-AUG-1999; 99US-0148341P.  
PR 13-AUG-1999; 99US-0148655P.  
PR 16-AUG-1999; 99US-0148684P.  
PR 17-AUG-1999; 99US-0149175P.  
PR 18-AUG-1999; 99US-0149426P.  
PR 20-AUG-1999; 99US-0149722P.  
PR 20-AUG-1999; 99US-0149723P.  
PR 20-AUG-1999; 99US-0149929P.  
PR 23-AUG-1999; 99US-0149902P.  
PR 23-AUG-1999; 99US-0149930P.  
PR 25-AUG-1999; 99US-0150566P.  
PR 26-AUG-1999; 99US-0150884P.  
PR 27-AUG-1999; 99US-0151065P.  
PR 27-AUG-1999; 99US-0151066P.  
PR 27-AUG-1999; 99US-0151080P.  
PR 30-AUG-1999; 99US-0151303P.  
PR 31-AUG-1999; 99US-0151388P.  
PR 01-SEP-1999; 99US-015130P.  
PR 07-SEP-1999; 99US-015263P.  
PR 10-SEP-1999; 99US-015370P.  
PR 13-SEP-1999; 99US-0153758P.  
PR 15-SEP-1999; 99US-0154018P.  
PR 16-SEP-1999; 99US-0154039P.  
PR 20-SEP-1999; 99US-0154779P.  
PR 22-SEP-1999; 99US-0155139P.  
PR 23-SEP-1999; 99US-0155486P.  
PR 24-SEP-1999; 99US-0155559P.  
PR 28-SEP-1999; 99US-0156458P.  
PR 29-SEP-1999; 99US-0156596P.  
PR 04-OCT-1999; 99US-0157117P.  
PR 05-OCT-1999; 99US-0157753P.  
PR 06-OCT-1999; 99US-0157865P.  
PR 07-OCT-1999; 99US-0158029P.  
PR 08-OCT-1999; 99US-0158232P.  
PR 12-OCT-1999; 99US-0158369P.  
PR 13-OCT-1999; 99US-0159293P.  
PR 13-OCT-1999; 99US-0159294P.  
PR 13-OCT-1999; 99US-0159295P.  
PR 14-OCT-1999; 99US-0159329P.  
PR 14-OCT-1999; 99US-0159330P.  
PR 14-OCT-1999; 99US-0159331P.  
PR 14-OCT-1999; 99US-0159637P.  
PR 14-OCT-1999; 99US-0159638P.  
PR 18-OCT-1999; 99US-0159584P.  
PR 21-OCT-1999; 99US-0160741P.  
PR 21-OCT-1999; 99US-0160767P.  
PR 21-OCT-1999; 99US-0160768P.  
PR 21-OCT-1999; 99US-0160770P.  
PR 21-OCT-1999; 99US-0160814P.  
PR 21-OCT-1999; 99US-0160815P.  
PR 22-OCT-1999; 99US-0160980P.  
PR 22-OCT-1999; 99US-0160981P.  
PR 22-OCT-1999; 99US-0160981P.  
PR 22-OCT-1999; 99US-0160989P.  
PR 25-OCT-1999; 99US-0161404P.  
PR 25-OCT-1999; 99US-0161405P.  
PR 26-OCT-1999; 99US-0161406P.  
PR 26-OCT-1999; 99US-0161359P.  
PR 26-OCT-1999; 99US-0161360P.

PR 26-OCT-1999; 99US-0161361P.  
PR 28-OCT-1999; 99US-0161920P.  
PR 28-OCT-1999; 99US-0161992P.  
PR 28-OCT-1999; 99US-0161993P.  
PR 29-OCT-1999; 99US-0162142P.

Query Match 100.0%; Score 63; DB 3; Length 262;  
Best Local Similarity 100.0%; Pred. No. 0.0019;  
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DMLKQGMIRP 11  
Db 44 DMLKQGMIRP 54

RESULT 3  
AAG05067  
ID AAG05067 standard; protein; 267 AA.

AC AAG05067;  
XX  
DT 17-OCT-2000 (first entry)

XX Arabidopsis thaliana protein fragment SEQ ID NO: 1331.

KW protein identification; signal transduction pathway; metabolic pathway;  
KM hybridisation assay; genetic mapping; gene expression control; promoter;  
KW termination sequence.

XX Arabidopsis thaliana.

FN EPI033405-A2.

XX  
PD 06-SEP-2000.

XX  
PE 25-FEB-2000; 2000EP-00301439.

XX  
PR 25-FEB-1999; 99US-0121825P.

PR 05-MAR-1999; 99US-0123180P.

PR 09-MAR-1999; 99US-0123548P.

PR 23-MAR-1999; 99US-0125788P.

PR 25-MAR-1999; 99US-0126264P.

PR 29-MAR-1999; 99US-0126785P.

PR 01-APR-1999; 99US-0127462P.

PR 06-APR-1999; 99US-0128234P.

PR 08-APR-1999; 99US-0128714P.

PR 16-APR-1999; 99US-0129845P.

PR 19-APR-1999; 99US-0130077P.

PR 21-APR-1999; 99US-0130499P.

PR 23-APR-1999; 99US-0130510P.

PR 28-APR-1999; 99US-0130891P.

PR 30-APR-1999; 99US-0131449P.

PR 30-APR-1999; 99US-0132048P.

PR 04-MAY-1999; 99US-0132407P.

PR 04-MAY-1999; 99US-0132484P.

PR 05-MAY-1999; 99US-0132485P.

PR 06-MAY-1999; 99US-0132486P.

PR 06-MAY-1999; 99US-0132487P.

PR 07-MAY-1999; 99US-0132863P.

PR 11-MAY-1999; 99US-0134256P.

PR 14-MAY-1999; 99US-0134218P.

PR 14-MAY-1999; 99US-0134219P.

PR 14-MAY-1999; 99US-0134221P.

PR 14-MAY-1999; 99US-0134370P.

PR 18-MAY-1999; 99US-0134768P.

PR 19-MAY-1999; 99US-0134941P.

PR 20-MAY-1999; 99US-0135124P.

PR 21-MAY-1999; 99US-0135533P.

PR 24-MAY-1999; 99US-0135629P.

PR 25-MAY-1999; 99US-0136021P.

PR 27-MAY-1999; 99US-0136392P.

PR 28-MAY-1999; 99US-0136782P.

PR 29-MAY-1999; 99US-0137222P.

PR 03-JUN-1999; 99US-0137528P.

PR 04-JUN-1999; 99US-0137502P.

PR 07-JUN-1999; 99US-0137724P.

PR 08-JUN-1999; 99US-0138094P.

PR 10-JUN-1999; 99US-0138540P.

PR 10-JUN-1999; 99US-0138847P.

PR 14-JUN-1999; 99US-0139119P.

PR 16-JUN-1999; 99US-0139452P.

PR 16-JUN-1999; 99US-0139453P.

PR 17-JUN-1999; 99US-0139492P.

PR 18-JUN-1999; 99US-0139454P.

PR 18-JUN-1999; 99US-0139455P.

PR 18-JUN-1999; 99US-0139456P.

PR 18-JUN-1999; 99US-0139457P.

PR 18-JUN-1999; 99US-0139458P.

PR 18-JUN-1999; 99US-0139459P.

PR 18-JUN-1999; 99US-0139460P.

PR 18-JUN-1999; 99US-0139461P.

PR 18-JUN-1999; 99US-0139462P.

PR 18-JUN-1999; 99US-0139463P.

PR 18-JUN-1999; 99US-0139750P.

PR 18-JUN-1999; 99US-0139763P.

PR 21-JUN-1999; 99US-0139817P.

PR 22-JUN-1999; 99US-0139899P.

PR 23-JUN-1999; 99US-0140353P.

PR 23-JUN-1999; 99US-0140354P.

PR 24-JUN-1999; 99US-0140695P.

PR 28-JUN-1999; 99US-0140823P.

PR 29-JUN-1999; 99US-0140991P.

PR 30-JUN-1999; 99US-0141287P.

PR 01-JUL-1999; 99US-0141842P.

PR 01-JUL-1999; 99US-0142154P.

PR 02-JUL-1999; 99US-0142055P.

PR 06-JUL-1999; 99US-0142390P.

PR 08-JUL-1999; 99US-0142803P.

PR 09-JUL-1999; 99US-0142920P.

PR 12-JUL-1999; 99US-0142977P.

PR 13-JUL-1999; 99US-0143542P.

PR 14-JUL-1999; 99US-0143624P.

PR 15-JUL-1999; 99US-0144005P.

PR 16-JUL-1999; 99US-0144085P.

PR 19-JUL-1999; 99US-0144325P.

PR 19-JUL-1999; 99US-0144331P.

PR 19-JUL-1999; 99US-0144332P.

PR 19-JUL-1999; 99US-0144333P.

PR 19-JUL-1999; 99US-0144334P.

PR 19-JUL-1999; 99US-0144335P.

PR 20-JUL-1999; 99US-0144352P.

PR 20-JUL-1999; 99US-0144632P.

PR 20-JUL-1999; 99US-0144684P.

PR 21-JUL-1999; 99US-0144814P.

PR 21-JUL-1999; 99US-0145086P.

PR 21-JUL-1999; 99US-0145088P.

PR 22-JUL-1999; 99US-0145085P.

PR 22-JUL-1999; 99US-0145087P.

PR 22-JUL-1999; 99US-0145089P.

PR 22-JUL-1999; 99US-0145192P.

PR 23-JUL-1999; 99US-0145145P.

PR 23-JUL-1999; 99US-0145218P.

PR 23-JUL-1999; 99US-0145224P.

PR 26-JUL-1999; 99US-0145276P.

PR 27-JUL-1999; 99US-0145913P.

PR 27-JUL-1999; 99US-0145918P.

PR 27-JUL-1999; 99US-0145919P.

PR 28-JUL-1999; 99US-0145951P.

PR 02-AUG-1999; 99US-0146386P.

PR 02-AUG-1999; 99US-0146388P.

PR 02-AUG-1999; 99US-0146389P.

PR 03-AUG-1999; 99US-0147038P.

PR 04-AUG-1999; 99US-0147204P.

PR 05-AUG-1999; 99US-0147192P.